

Acetylcholine Receptor Autoantibody (AChRAb)

RADIOIMMUNOASSAY

NEUROIMMUNOLOGY

ASSAY CHARACTERISTICS

Semi-Quantitative

TOTAL RUNNING TIME

4 Hours and 40 Minutes

SPECIMEN MATRIX

Human Serum

REFERENCE RANGE

≤ 0.2 nmol/L: Negative

0.21 – 0.49 nmol/L: Indeterminate

≥ 0.5 nmol/L: Positive

PRECISION

Intra-Assay		Inter-Assay	
Dose (nmol/L)	% CV	Dose (nmol/L)	% CV
0.97	3.10	0.5	5.9
1.81	1.66	2.2	5.0
3.3	1.82		

PATIENT GROUP NUMBER OF PATIENTS POSITIVE FOR ACHRAB %

Myasthenia Gravis	53/53	100%
Type 1 Diabetes	0/10	0%
Graves' Disease	1/46	2%
Addison's Disease	1/13	7%
Rheumatoid Arthritis	0/10	0%
Healthy Blood Donors	2/100	2%

CLINICAL SENSITIVITY & SPECIFICITY

Sensitivity:	100%
Specificity:	98%

ORDERING INFORMATION

KR6590 – 100 Tube Kit

The KRONUS Acetylcholine Receptor Autoantibody (AChRAb) RIA Assay Kit is for the semi-quantitative determination of acetylcholine receptor autoantibodies in human serum, and is useful as an aid in the differential diagnosis of myasthenia gravis (MG).

Myasthenia gravis (MG) is a neuromuscular disorder characterized by muscle weakness, which in most cases is a result of autoantibody-mediated loss of functional acetylcholine receptors in the neuromuscular junction. Anti-AChR antibodies can be detected in approximately 90% of myasthenics, and although antibody titers of patients with MG are always significantly elevated versus normal donors, the absolute titer of anti-AChR antibody does not appear to correlate closely with age, sex, steroid therapy or duration of symptoms.

Human muscle acetylcholine receptors (AChR) exist as two developmentally regulated subtypes: adult and fetal. Adult and fetal receptor subtypes differ by one of their subunits (the γ subunit in the fetal receptor is replaced by the ϵ subunit in the adult receptor). The vast majority of AChRAb in the sera of patients with myasthenia gravis recognize the fetal form of AChR; however, some MG patient sera contain antibodies that bind specifically to the adult form of the receptor.

Consequently, a carefully balanced mixture of detergent-solubilized fetal and adult forms of the receptor is the optimal preparation for AChRAb assays. This mixture of receptors, labeled with ^{125}I -labeled alpha-bungarotoxin, provides the basis for the KRONUS AChRAb RIA kits.



For In Vitro Diagnostic Use



ASSAY PROCEDURE

Sample Volume: 5 µL per Tube

References and Samples into Labeled Tubes: 5 µL

Acetylcholine Receptor Reagent: 100 µL
Gently Vortex Tubes
2 Hour Incubation at Room Temperature

Anti-Human IgG: 50 µL
Gently Vortex Tubes
2 Hour Incubation at 2 - 8° C

Wash Buffer: 1 mL
Gently Vortex Tubes
Centrifuge Tubes for 20 Minutes at 2 - 8° C

Wash Buffer: 1 mL
Centrifuge for 20 Minutes at 2 - 8° C

Decant and Drain:
Count Radioactivity of Pellets for 5 Minutes

Total Assay Time is Approximately 4 Hours and 40 Minutes

REFERENCES

1. Vincent A, Newsom-Davis J. Acetylcholine receptor antibody as a diagnostic test for myasthenia gravis: results in 153 validated cases and 1967 diagnostic assays. *J Neurol Neurosurg Psychiatry*. 1985 Dec;48(12):1246–1252.
2. Lindstrom JM, Seybold ME, Lennon VA, Whittingham S, Duane DD. Antibody to acetylcholine receptor in myasthenia gravis. Prevalence, clinical correlates, and diagnostic value. *Neurology*. 1976 Nov;26(11):1054–1059.
3. MacLennan C, Beeson D, Buijs AM, Vincent A, Newsom-Davis J. Acetylcholine receptor expression in human extraocular muscles and their susceptibility to myasthenia gravis. *Ann Neurol*. 1997 Apr;41(4):423–431.
4. Beeson D, Jacobson L, Newsom-Davis J, et al. A transfected human muscle cell line expressing the adult subtype of the human muscle acetylcholine receptor for diagnostic assays in myasthenia gravis. *Neurology*. 1996 Dec;47(6):1552–1555.



...Your Source for Sensitive Autoimmune Diagnostics